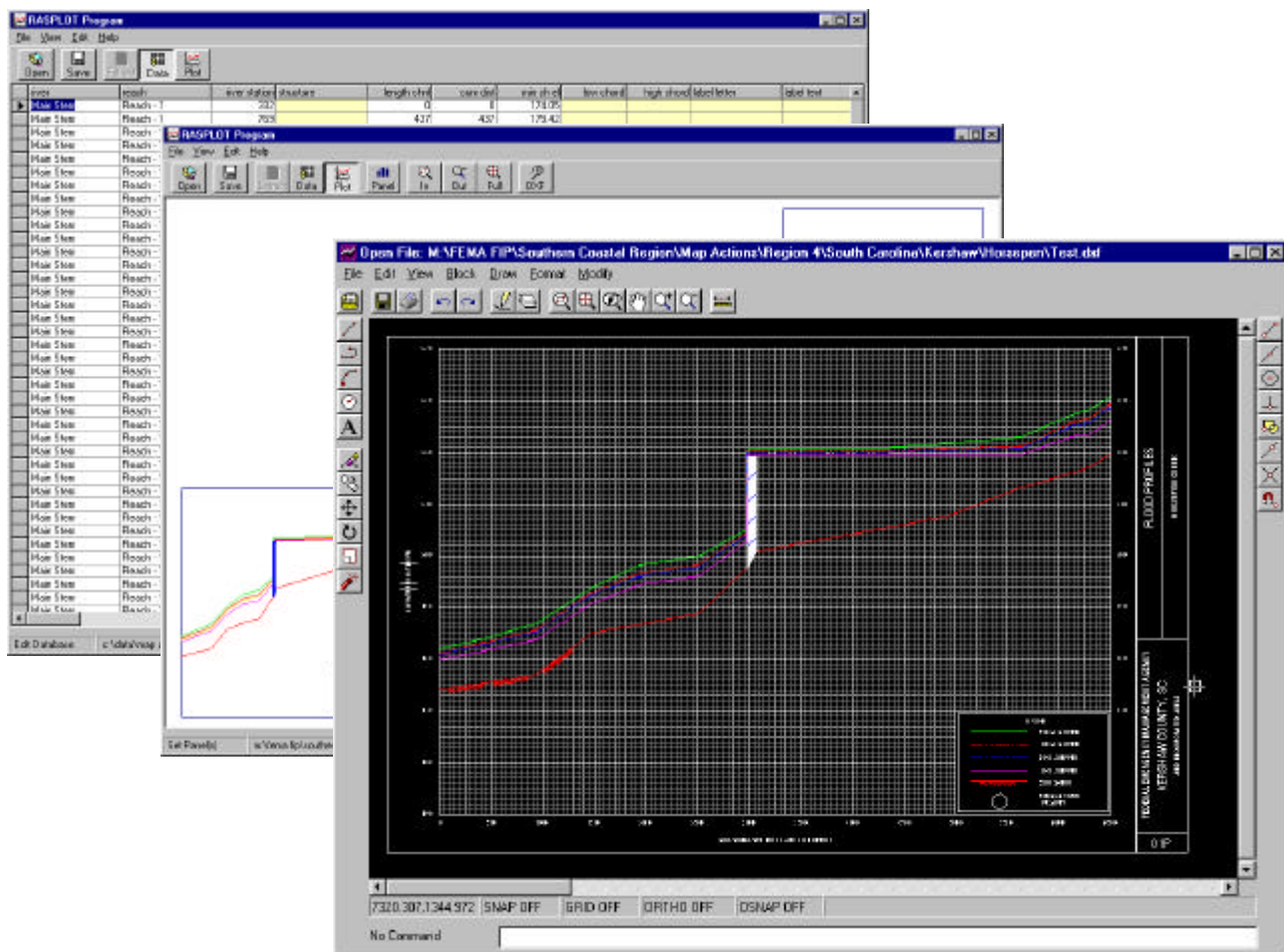# RASPLOT

Flood Insurance Study Profile Plot Program
User's Guide

Federal Emergency Management Agency

December 1999
Version 2.0.1

<u>FIGURES</u>

1.0 INTRODUCTION

1.1 What Is RASPLOT?

RASPLOT is a computer program that creates a Flood Insurance Study (FIS) profile by automatically extracting data from HEC-RAS or HEC-2 input and output files. In addition, the RASPLOT program can be used to create FIS profiles for any other hydraulic model by entering the necessary data manually. The final product will be in DXF file format and a CADD program is included as part of this program to edit and print profiles as necessary.

1.2 System Requirements

In order to run, RASPLOT requires:
- Windows 95/98/NT operating systems
- Microsoft compatible mouse
- Printer
- SVGA graphics card and monitor.

1.3 Program Installation

Please note: The user must initially uninstall any previous versions or Beta versions of RASPLOT. For guidance on uninstalling previous versions of RASPLOT, see section 1.4.

To install RASPLOT from a CD-ROM:

The setup program in the setup.exe file runs from a CD-ROM. On most systems, the CD-ROM is drive D. The following steps refer to drive D. If necessary, substitute the appropriate drive letter for D.

1. Insert the CD in the appropriate drive.

2. Select Windows 95/98/NT Start button, choose Run, designate the CD-ROM, and enter the path name and **setup** (i.e., D:\setup).

    To stop the setup program, choose Cancel. If you cancel the setup program after copying has begun, all files copied by the setup program will be removed.

3. RASPLOT displays "C:\Program Files\Rasplot" as the path. Accept the default destination location by clicking the upper right button, or use the Change Directory button to choose a different location.

To install RASPLOT from the Internet:

1. Download the zipped file from the internet to a local directory (e.g., C:\temp) on your computer's hard drive.

2. Open the .Zip archive(s), highlight the file(s), and extract it (them) to a local directory on your computer's hard drive.

    (**NOTE:** All of the RASPLOT files must be in the same directory for the program to install properly on your system).

3. Click on "Setup.exe" to run the program file.

    To stop the setup program, choose Cancel. If you cancel the setup program after copying has begun, all files copied by the setup program will be removed.

4. RASPLOT displays "C:\Program Files\Rasplot" as the path. Accept the default destination location by clicking the upper right button, or use the Change Directory button to choose a different location.

Click Start and then point to Programs. Locate the RASPLOT folder and click the program name to start RASPLOT.

When you first open the RASPLOT program, a "Setup Program" window will be displayed. This window allows you to set a program path to HEC-2 and/or HEC-RAS.

1.4 Uninstalling RASPLOT

The following steps should be followed to uninstall RASPLOT, any previous version of RASPLOT, or Beta versions of RASPLOT:

1. From Windows 95/98/NT Taskbar Start button, choose Settings and Control Panel.

2. From the Control Panel, choose Add/Remove Programs.

3. From the list of programs, select RASPLOT.

4. Choose Add/Remove.

5. In the confirmation dialog box, choose Yes.

All of the program files that were part of the installation will be removed. Files that were created in the RASPLOT folder after RASPLOT was installed will not be removed

1.5 Program Setup

This command opens a dialog box that allows the user to locate *ras.exe*, *hec2.exe* files, and set-up a default directory.

The user is required to locate the HEC-RAS program file (i.e., ras.exe) and the HEC-2 program file (i.e., hec2.exe) as shown below. Also requested is the default directory.

The default directory will open first when the OPEN, SAVE Database, or Save DXF buttons or commands are activated.

In order to select the file and/or directory, click the browse button next to the item desired to be changed. The open dialog box will be opened. Browse the computer to find the desired files.

Please note that if only the HEC-RAS program is needed, then only the HEC-RAS program is required. If only the HEC-2 program is needed, then only the HEC-2 program is required.
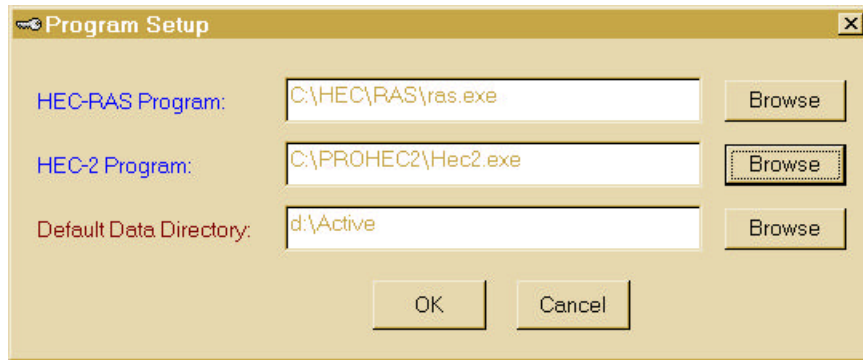
Figure 1.1 Program Setup

1.6 Acknowledgements

Members of the team in charge of the development of this program:

Doug Bellomo, P.E.	**FEMA Project Officer**
John Magnotti III	**FEMA Project Engineer**
Zekrollah Momeni, P.E.	**Project Manager, Dewberry & Davis**
Syed Qayum	**Project Leader, Dewberry & Davis**
Moe Khine	**Lead Engineer, Dewberry & Davis**
Xiaoyi Zhang	**Lead Programmer, Dewberry & Davis**
Mike Dunn	**Engineer, Dewberry & Davis**

A special thanks to everyone who helped Beta test RASPLOT and gave us your comments.

4

2.0 The Profile Table Database

2.1 What Is Profile Table Database?

The Profile Table Database is an Access Database. It has four tables: [Landmark], [Panel], [Working], and [Work Header]. This section goes in detail about the table [Working].

> **Please note:** The user should not modify the [Landmark], [Panel], or [Work Header] tables outside of RASPLOT. In addition, the data inside the table [Working] should not be sorted. To do so, may cause RASPLOT to malfunction.

River
This is the river name from the HEC-RAS Report File. For HEC-2 the default is "1". Any letters or numbers can be entered in this column.

Reach
This is the reach name of the given river from the HEC-RAS Report File. For HEC-2 the default is "1". Any letters or numbers can be entered in this column.

River Station
This is the River Station from HEC-RAS or the SECNO from HEC-2 file. Every entry in this column must be numerical. Letters must not be entered.

Structure
The type of structure, such as bridge, culvert, and inline weir, is shown under this column.
Please use:
      BRIDGE-Up or BRIDGE-Dn for Bridges
      CULVERT-Up or CULVERT-Dn for Culverts
      INLINE-Up or INLINE-Dn for Inline Wiers
      LID-Up or LID-Dn for long culverts and for culverts in series

HEC-RAS

Bridge	BRIDGE-UP is labeled at the River Station where the bridge upstream internal section is located.
	BRIDGE-DN is labeled at the River Station where the bridge downstream internal section is located.
Culvert	CULVERT-UP is labeled at the River Station where the culvert upstream internal section is located.
	CULVERT-DN is labeled at the River Station where the culvert downstream internal section is located.
Inline Weir	INLINE-UP is labeled at the River Station for the upstream face of the weir where the inline weir profile data is specified.
	INLINE-DN is labeled at the same River Station for the downstream face of the weir.
Multiple Opening*	If the bridge is within the left and right channel bank stations the word 'Bridge #*-Up' is labeled for the bridge upstream internal section at the River Station where the Multiple Opening is modeled.
	If the bridge is within the left and right channel bank stations the word 'Bridge #*-Dn' is labeled for the bridge downstream internal section at the River Station where the Multiple Opening is modeled.

* represents the number assigned to the bridge within the channel bank stations by the HEC-RAS program.

HEC-2

Special Bridge	The word 'Bridge-Up' is labeled at the cross-section immediately upstream (Section 3) of Special Bridge card. An additional cross section is inserted by the RASPLOT program with the same section number as Section 3 and labeled as 'Bridge-Dn'.
	In some situations, inline weirs, dams, and culverts, are modeled as the Special Bridge routine in HEC-2. To change the type of structure, the name of the structure in the Profile Table should be changed according to the following: • For culvert, replace BRIDGE-Up with CULVERT-Up and BRIDGE-Dn with CULVERT-Dn. and also check that low cord elevations of the culvert with the value given for the bridge under low cord column. • For Inline weir and Dam, replace BRIDGE-Up with INLINE-Up and BRIDGE-Dn with INLINE-Dn and remove the low cord elevation of the bridge from the low cord column.
Special Culvert	RASPLOT creates two additional cross sections for Special Culvert routine. One is for the culvert upstream internal section and labeled as 'Culvert-Up' and the other is for the culvert downstream internal section and labeled as 'Culvert-Dn'. The same section number for Section 3 of the Special Culvert routine is assigned for these sections.
Normal Bridge	The word 'Normal' is labeled for structures that are not modeled as Special Bridge or Special Culvert routines. The word 'Normal' is labeled at the cross sections with BT or X2 records.
	In some situations, inline weirs, dams, culverts, and bridges are modeled as the Normal Bridge routine in HEC-2 To change the type of structure, the name of the structure in the Profile Table should be changed according to the following: • For bridge, replace 'Normal' with BRIDGE-Up and BRIDGE-Dn and check the low cord elevations of the bridge with the values given in the low cord column. • For culvert, replace 'Normal' with CULVERT-Up and CULVERT-Dn and check the low cord elevations of the culvert with the values given in the low cord column. • For Inline weir and Dam, replace 'Normal' with INLINE-Up and INLINE-Dn and remove the low cord elevation from the low cord column.

Length Channel (LENGTH CHNL)
This is the length of the channel at the River Station from the downstream cross section.

HEC-RAS

Length channel is obtained from the user table RASPLOT except, for the culvert and inline weir.	
Culvert	The length of the cross-section at Section 3 is equal to the Upstream Distance from culvert data. The length of the cross-section at Culvert-Up section is equal to the length of the culvert. The length of the cross-section at Culvert-Dn section is computed by subtracting the summation of Upstream Distance and the culvert length from the channel length at Section 3. Channel length at Section 3 is obtained from the cross sectional data in the HEC-RAS Report file.

Inline Weir	The length of the cross-section at Section 3 is equal to the Distance from Deck/Roadway data. The length of the cross-section at Inline-Up section is equal to the Width from Deck/Roadway data. The length of the cross-section at Inline-Dn section is computed by subtracting the summation of Distance and Width from the channel length at Section 3. Channel length at Section 3 is obtained from the cross sectional data in the HEC-RAS Report file.

HEC-2

Length channel is obtained from the SUMMARY Table, column XLCH, except for the Special Culvert routine.
Special Culvert	The length of the cross-section at Culvert-Up section is equal to the length of the culvert and is obtained from the SC record in the input file. RASPLOT subtracts the culvert length from the channel length at Section 3 and divides by two. This length is assigned as the channel length at Section 3 and the channel length at Culvert-Dn section. The distances at the culvert cannot be zero or a negative number.
Special Bridge	The channel length at Bridge-Up section is equal to the channel length at Section 3. RASPLOT assigns a value of zero as channel length at Bridge-Dn section.

Cumulative Distance (CUM DIST)

Cumulative distance is computed by the RASPLOT program by adding the Length Channel values from a downstream to an upstream direction.

Minimum Channel Elevation (MIN CH EL)

This is the lowest ground elevation within the channel bank stations.

HEC-RAS

Minimum Channel Elevation is obtained from the Min Ch El column from the user table RASPLOT except for the culvert, inline weir, and multiple opening.
Culvert	Minimum Channel Elevation at the Culvert-Up and Culvert-Dn section is equal to the culvert invert elevation, and it is obtained from the culvert data in the HEC-RAS Report file.
Inline Weir	Minimum channel elevation at the Inline-Up section is equal to the minimum channel elevation at Section 3, and minimum channel elevation at the Inline-Dn section is equal to the minimum channel elevation at of the cross-section immediately downstream (Section 2).
Multiple Opening	RASPLOT first determines the type of structure within the channel bank stations. If it is a bridge, the Minimum Channel Elevation is obtained from the user table RASPLOT. If it is a culvert, the Minimum Channel Elevation is equal to the culvert invert elevation. The type of structure is obtained from the Multiple Opening data in the HEC-RAS Report file.

HEC-2

Minimum Channel Elevation is obtained from the SUMMARY Table, ELMIN column except for the culvert.
Culvert	Minimum channel elevation at the Culvert-Up section is equal to the ELCHU value from the SC record, and minimum channel elevation at the Culvert-Dn section is equal to the ELCHD value from the SC record.

Low Cord

For the bridge, this is the elevation of the low cord. For the culvert, this is the elevation of the crown of the culvert. For inline weirs and dams, low cord elevation is not considered.

Bridge	The ground station with the minimum channel elevation between the channel bank stations of the bridge internal section is first determined by the RASPLOT program, then the low cord elevation at this station is determined from the Deck/Roadway data. Low cord elevation is determined in this manner for both Bridge-Up and Bridge-Dn sections.
Culvert	For a single culvert, the low cord elevation is computed by adding the Rise to the culvert invert elevation. Low cord elevation is determined in this manner for both culvert-Up and Culvert-Dn sections.
	For multiple culverts, RASPLOT selects the culvert with the centerline station nearest to the ground station with minimum channel elevation. Then low cord elevation is determined in the same manner as the single culvert.
Multiple Opening	RASPLOT first determines the type of structure within the channel bank stations. If it is a bridge, then the procedure to determine the low cord for the bridge is followed. If it is a culvert, then the procedure to determine the low cord for the culvert is followed.

HEC-2

Special Bridge	The low cord elevation from the X2 record is used. The same value is used for both Bridge-Up and Bridge-Dn sections.
Special Culvert	The low cord elevation for Culvert-Up section is computed by adding the Rise to the ELCHU value and the low cord elevation for Culvert-Dn section is computed by adding the Rise to the ELCHD value.
Normal Bridge	The ground station with the minimum channel elevation between the channel bank stations of section 3 and 4 of normal bridge routine is first determined by the RASPLOT program. Then the low cord elevation at this station is determined from the BT and X2 data.

High Cord

For all the structures, the ground station with the minimum channel elevation between the channel bank stations is first determined by the RASPLOT program. For HEC-RAS, the high cord elevation at this station is determined from the Deck/Roadway data. High cord elevation is determined in this manner for both Upstream and Downstream sections. For HEC-2, the high cord elevation at this station is determined from the BT or X2 data.

Label Letter

This column is used to place letters at various River Stations on the profile. For a given River Station, type the letter you wish to show. No more than two letters can be shown in this column.

Label Text

This column is used to place a label at any River Station on the profile. For example, corporate limits, road names, confluence of stream, etc., can be placed in this column.

Profiles

Water-surface elevations of the profiles from HEC-RAS, HEC-2, or user inserted values are shown in these columns.

HEC-RAS

Water-surface elevations for the selected profiles are obtained from the RASPLOT user table, except for the culvert and the inline weir.

Culvert	The water surface profile through the culvert is selected by the RASPLOT program, depending upon the type of flow: • If the type of flow is low flow, the water-surface elevation at the Culvert-Up section is equal to the Culv WS In value from the RASPLOT table, and the water-surface elevation at the Culvert-Dn section is equal to the Culv WS Out value from the RASPLOT table. • If the type of flow is pressure flow, the water-surface elevation at the Culvert-Up section is equal to the water-surface elevation at Section 3, and the water-surface elevation at the Culvert-Dn section is equal to the Culv WS Out value from the RASPLOT table. • If the type of flow is weir flow, the water-surface elevation at the Culvert-Up section is equal to the water-surface elevation at Section 3. The water-surface elevation at Culvert-Dn section is obtained by adding the depth of weir flow over the upstream Deck/Roadway profile to the downstream high cord elevation.
Inline Weir	The water-surface elevations at the Inline-Up and the Inline-Dn are equal to the water-surface elevation at Section 3.

HEC-2

Water-surface elevations for the selected profiles are obtained from the SUMMARY Table except for the culvert.	
Culvert	The water-surface elevation at Section 3 is used at Culvert-Up and Culvert-Dn sections.
Inline Weir	The water-surface elevations at the Inline-Up the Inline-Dn are equal to the water-surface elevation at Section 3.

2.3 How To Create A Profile Table Database For HEC-RAS

You will need to open a HEC-RAS Project file on your computer hard disk or on a network drive, by clicking File Menu and selecting the Open command or clicking the Open button.

In the Open File Dialog box, by default, the HEC-RAS option is selected in the 'Select a Model' box. Select the Drive where the desired project file is located. In the folder list, double-click folders until you open the folder that contains the project file you want. Select the project file and click the "OK" button or double click the project file.

Once the Project file is open, click on the "Extract" button, and a profile table will be created directly if the project file includes the Report File from which RASPLOT will extract the data.

2.3.1 How To Create A Report File for HEC-RAS

If the Report File is missing, RASPLOT will prompt the user to open HEC-RAS in order to create the Report File. RASPLOT automatically creates a special user defined table, named as RASPLOT.

To create the report file, click "File" on the HEC-RAS main Window and select "Generate Report." The user must ensure that the following boxes from Input Data Area (In the Generate Report Window) are checked:

- Plan Data
- Geometric Data
- Reach Length

Under "Profiles To Include In Report", select all of the profiles by first clicking the "Set Profiles" Button and clicking "Select All". Ensure that there are no boxes checked within the Output box. Under "Selected Summary Tables" box, "RASPLOT" must be displayed. Otherwise, select "RASPLOT from "Available Summary Tables" box. Click on "Generate Report" button.

After the report is generated, Click on the Close button. Save the project file. Close the HEC-RAS window. Click on the 'Extract Data' button.

Please note that RASPLOT requires a minimum of two profiles. Also, ensure that "No Table Borders" is selected and "Summary of Errors, Warnings, and Notes" is not checked.

In addition, if the user defined table RASPLOT was not automatically created, the user must create a user defined table with the following Table Column Headings:

- W.S. Elev
- Culv WS Out
- Culv Inv El Dn
- Culv WS IN
- Culv Inv El Up
- Length Chnl
- Min Ch El
- Culv Q
- Q Wier
- E.G. Elev

Under Additional Options, the following must be checked: "Get the cross sections inside bridge nodes", "Get Multiple Opening XS's", "Get all culverts in a group", "Note Location of Internal Boundaries", Cross Sections", "Culverts, and Bridges". Save table with the name RASPLOT.

Figure 2.1 River/Reach Connection Dialog Box

2.4 How to Create A Profile Table Database For HEC-2

You will need to open a HEC-2 input file on your computer hard disk or on a network by clicking File Menu and selecting Open command or by clicking Open Button.

In the Open File Dialog box, select HEC-2 from the 'Select a Model' box. Then select the Drive where the desired input file is located. In the folder list, double-click folders until you open the folder that contains the input file you want. Select the input file and click the "OK" button or double click the input file.

If you can't find the HEC-2 input file in the folder list, please see note below.

> Note: To open a HEC-2 input file with a different extension than the default for a particular model, click the file type you want, and then double-click the input file name in the folder list. You can also type the extension in the File Type box; for example, type *.HC2 to find HEC-2 input files with the HC2 extension.

Once the Input file is open, Click on the "Extract Data" button. RASPLOT will run the HEC-2 program, and a profile table will be created.

2.5 How to Create Profile Table Database for non-HEC-RAS or non-HEC-2 hydraulic models?

You will need to open a folder on your computer hard disk or on a network by clicking File Menu and selecting Create Blank Database command.

Select the Drive where you want the file to be located. In the folders list, double click folders until you open the folder you want the file to be located. Type the primary name of the database file in the "File Name" box and click the "OK" button. RASPLOT will assign '.mdb' as an extension to the newly created Profile Table.

Type number of profiles to be plotted in the pop-up window.

Open the table using Microsoft Access, and insert the data into table "Working"

> **Please note:** The user should not modify the Landmark, Panel, or Work Header Tables outside of RASPLOT. In addition, the data inside the table "Working" should not be sorted. To do so, may cause RASPLOT to not function properly.

3.0 Navigating in RASPLOT

3.1 RASPLOT Program Window

This window has the Menu Bar and the Tool Bar.

3.1.1 File Menu
The File menu includes the following commands:

Open	This command opens the 'Open File' dialog box to select HEC-RAS or HEC-2 files or to open an existing Profile Table Database.
Extract Data	This command extracts data of the currently selected HEC-RAS project file or HEC-2 input file.
Print Data	This command prints the RASPLOT profile table.
Save Database	This command saves the open profile database file.
Save DXF File	This command creates a DXF file.
DXF Editor	This command opens the DXF editor program.
Setup Program	This command opens a dialog box that allows the user to locate *ras.exe*, *hec2.exe* files, and set-up a default directory.
Create Blank Database	This command creates a user defined database to be used for non-HEC-RAS or non-HEC-2 hydraulic models.
Exit	This command exits RASPLOT.

3.1.2 View Menu
The View menu includes the following commands:

HECRAS Project Info	This command displays the following information about the HECRAS project file: • Title of the Project file and its original path • Title of the Plan file and its original path • Title of the Geometry file and its original path • Title of the Flow file and its original path • Project description
Zoom In	This command allows you to draw a window around an area you wish to view at a closer scale.
Zoom Out	This command allows you to reduce the picture size by 10%.
Full Extent	This command allows you to restore the profile to its original size.

3.1.3 Edit Menu
The Edit menu includes the following commands:

Setup Profile	This command opens the 'Select Profile(s)' dialog box and allows the user to select the profiles from current profile database.
Setup Backwater	This command opens the 'Backwater Setup' dialog box and allows the user to enter backwater elevations for each selected profile.
Setup Stream	This command will display the 'River/Reach Connection' diagram window and allows the user to select the stream or reaches to plot the profile. This command is only available for HEC-RAS project files with multiple streams and reaches.
Re-compute Cumulative Distance	This command allows the user to re-compute the cumulative distances in the profile database if the starting cumulative distance is to be changed or if a cross section is added or deleted or the channel length at a cross section is changed.

Edit Database	This command allows the user to view and/or edit the Profile Table Database.
Edit Title Info	This command allows the user to edit and change the community, county, state, and stream names, and the stream distance.
Edit Panel Info	This command displays the 'Panel Setup Information' dialog box and allows the user to modify the following: Starting Station, Ending Station, Unit, Horizontal Scale, Vertical Scale, Horizontal offset of each panel, and Vertical offset of each panel.
Edit Landmark	This command displays the 'Landmark Table' window and allows the user to insert horizontal or vertical notes at any point on the profile. This is not limited to cross-section locations.
Paneling/Plotting	This command allows the user to view the Profile Plot window

3.1.4 Help Menu
The Help Menu provides the user with the following options.

About	"About" gives the user information about RASPLOT and the computer's "System Information."
Online Help	Online Help allows the user to access RASPLOT Hypertext Help file for help and definitions of RASPLOT functions.

3.1.5 Status Bar
This bar displays the current program and the cumulative distance and corresponding elevation of the point where the mouse pointer is located.

### 3.1.6 RASPLOT Toolbar
The RASPLOT toolbar contains the following:

Open	This button opens the 'Open File' dialog box to select HEC-RAS or HEC-2 files or to open an existing Profile Table Database.
Save	This button allows the user to save the RASPLOT profile database.
Extract Data	This button extracts data after you select HEC-RAS project file or HEC-2 input file.
Data	This button opens allows the user to view table "Working" from the RASPLOT database.
Plot	This button opens the Profile Plot Window.
Panel Info*	This button displays the 'Panel Setup'dialog box and allows the user to modify the following: Community Name, County Name, State, Stream Name, Stream Distance, Starting Station, Ending Station, Unit, Horizontal Scale, Vertical Scale, Horizontal offset of each panel, and Vertical offset of each panel.

Zoom In*	This button allows you to draw a window around an area you wish view at a closer scale.
Zoom Out*	This button allows you to reduce the picture size in order to see the entire profile.
Full Extent*	This button allows you to restore the profile to its original size.
DXF*	This button creates a DXF file.

*These buttons are not available until the profile plot window is open.

3.2 River/Reach Connection Dialog Box

For HEC-RAS models with multiple streams and/or reaches, this window will be displayed after the data is extracted from the HEC-RAS Report File by the RASPLOT program. Select the streamline or reach you wish to plot as part of the continuous stream by clicking on the lines of the desired streamlines. When you have finished your selection, click "File" and "Exit". The profile table will be displayed for the selected stream lines. To select another stream or the combination of other stream lines click Select Stream command from the Edit Menu.
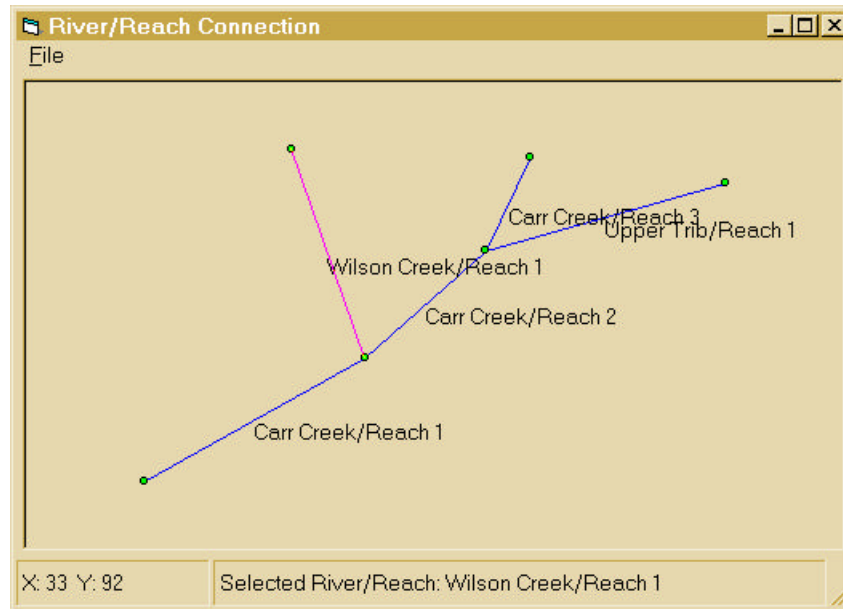
Figure 3.1 River/Reach Connection Dialog Box

3.3 Backwater Setup Dialog Box

Backwater Setup command in Edit Menu will open the "Backwater Setup" dialog box. Enter backwater elevations for the corresponding profile. Once backwater elevations are entered click the "OK" button.
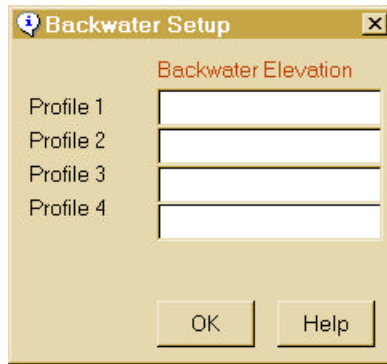
Figure 3.2 Backwater Setup Dialog Box

3.4 Select Profile Dialog Box

Select Profile command in the Edit Menu which will open the "Select Profile(s)" window and allows you to select the profiles to be printed.

The "Select Profile(s)" window shows a list of the available profiles. Use the double forward arrows (>>) to select all the profiles to be printed. Otherwise, click on one profile at a time and use the single forward arrow (>) to select the profiles you want to print. If you change your mind and do not want to print that profile click on the profile and select the single backward arrow (<). If you do not want to print all the profiles use the double backward arrows (<<). To Change the name of a profile, click the profile and use the drop down window at the bottom of the screen to change its name. For example, if Profile 1 is labeled 10 Year Flood, and it should be 100 Year Flood, first click on 10 Year Flood and then select 100 Year Flood from the drop down window.
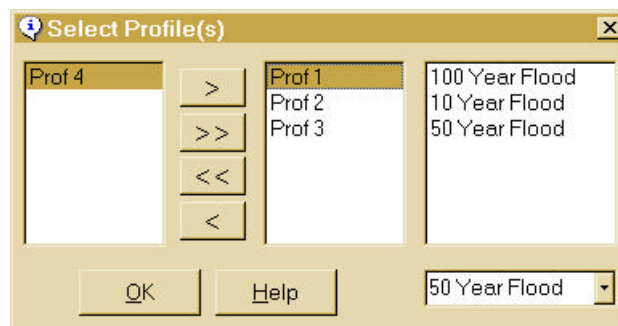
Figure 3.3 Select Profile(s) Dialog Box

3.5 Header Information

The following information can be changed by either clicking "Edit" and "Edit Title Info," "Edit" and "Edit Panel Info", or the "Panel Button."

Community Name	Type the name of the community. For Counties and/or County Wide Studies, type the County name. For example, "Village of Northbrook" or "Cook County"
County Name	Type the name of the County. For Counties, type "Unincorporated Areas" or "Incorporated Areas" as appropriate.
State Name	Type the 2 letter abbreviation for the State. For example, "VA" for Virginia, "IL" for Illinois, etc.
Stream Name	Type the Name of the Stream.

Stream Distance	Type where the stream's channel distance is measured from. For example, "ABOVE CONFLUENCE WITH DEWEY RIVER," or "ABOVE MOUTH." When the DXF file is created, RASPLOT will add "STREAM DISTANCE IN" and selected unit (i.e., "STREAM DISTANCE IN FEET ABOVE MOUTH".

Figure 3.4 Header Information

3.6 Panel Setup Information Dialog Box

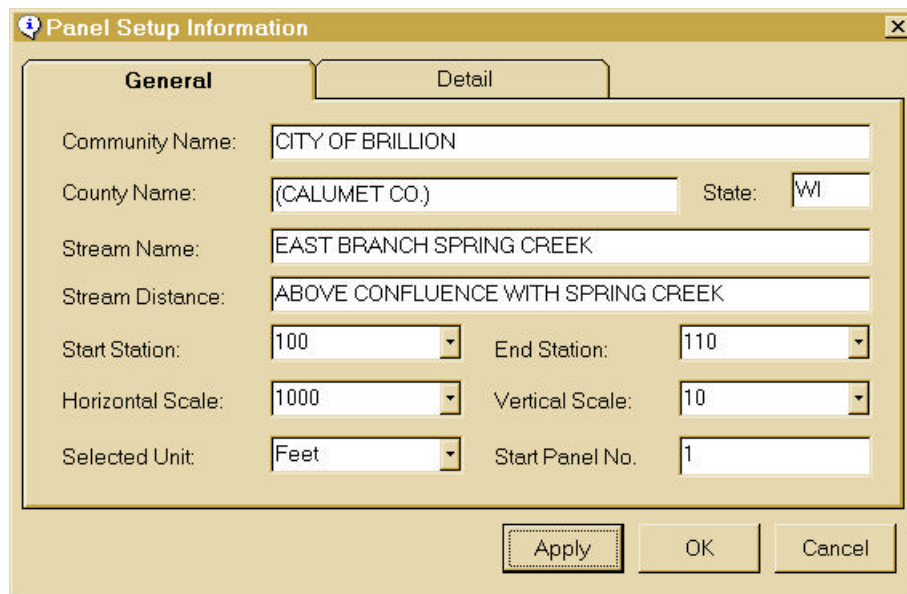Panel Info command in the Edit Menu or the Panel button will open the Panel Setup Information dialog box.

The user can view and edit the Community Name, County Name, State, Stream Name, Stream Distance, Starting Station, End Station, Panel Starting Elevation, and Ending Elevation of each panel. If the user wants to reduce the length of the first panel retype the end station. Same station should be retyped as the starting station of the next panel.

The user is given the option of plotting the profile in different units. "Feet", "Hundred Feet", "Thousand Feet", "Mile", "Meters", and "Kilometers" are available for use.

The user can view and edit the Horizontal Scale and Vertical Scale of each panel. For units of Feet, the horizontal scale of 100, 200, 400, 500, 1000, and 2000 feet and vertical scale of 5, 10, and 20 feet are given in the pull down window. Use the pull down windows to select both horizontal and vertical scales. For the units of Miles, in order to calculate the horizontal scale, use the formula, Horizontal Scale = Desired Interval * 5280 (i.e., 528 = 0.1 * 5280). The user needs to type horizontal scales of 528, 1056, and 2640 feet in order for the horizontal labels to be exactly 0.1, 0.2, and 0.5 mile, respectively. When selecting Meters or Kilometers, RASPLOT assumes the input from HEC-2 and HEC-RAS is in meters.

Only Vertical scales can be changed for individual panels.

X and Y Origins allows the user to move the panel vertically, or horizontally. For example, for a vertical scale of 5, reduce the existing number by 10 in the Y Origin column for a selected panel and click OK. The panel will move up 2 inches.
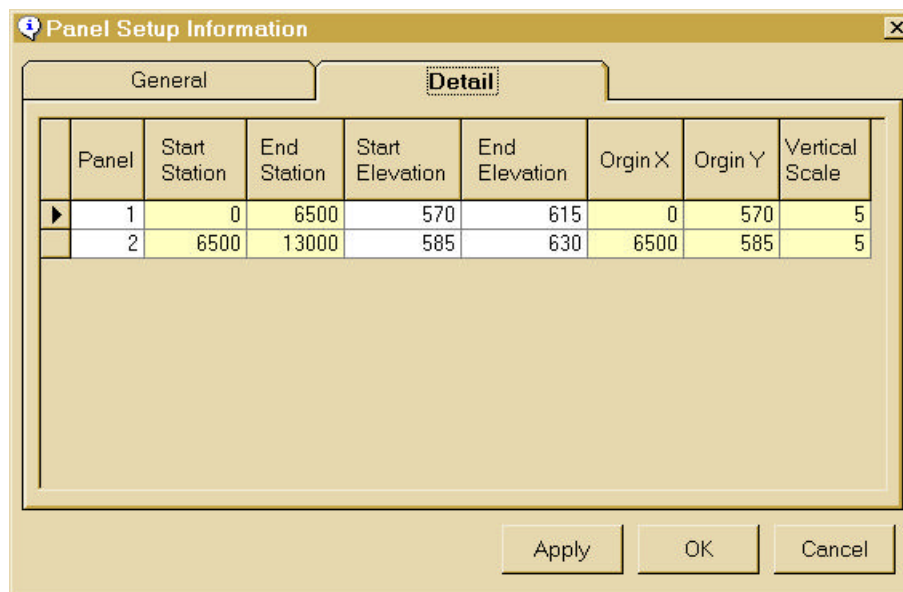
Figure 3.5 Panel Setup Information Dialog Box (1 of 2)

Figure 3.6 Panel Setup Information Dialog Box (2 of 2)

3.7 LandmarkTable

The 'Landmark Table' dialog box and allows the user to insert horizontal or vertical notes at any point on the profile. This is not limited to cross-section locations.

To automatically insert the location of a note, right click on the Profile Plot window and click on "Insert Landmark Point." Select the point on the Profile Plot window in which you desire to place a note. RASPLOT will automatically add the cumulative distance and elevation you select.

To Delete any point, select the row you desire to be deleted, and press the Delete key.

The Landmark Table consists of the following columns:

Cumulative Distance	This is the horizontal starting point along the profile at which the user wishes the text to be located.
Elevation	Elevation at which the text is to be located.
Text	Text the user wishes to be printed.
Orientation	This field contains whether the user wants the text to be printed Vertically or Horizontally.
Adjusted	This field contains how the user wants the text to be oriented. For Left Justified, select "L/B", for Center Justified, select "Center", and for Right Justified, select "R/T".
Underline	This options allows the user to underline the text.

Figure 3.7 Landmark Table

3.8 HEC-RAS Project Information
This window stores project information from the HEC-RAS project file into the RASPLOT Profile Database.

Figure 3.8 HEC-RAS Project Dialog Box

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4.0 DXF Editor

4.1 What is the DXF editor

The DXF editor allows the user to view, modify and print DXF files. It is a fully functional CADD program where the user can create, erase, trim, explode, rotate, scale, copy, move, and format objects. In addition, the DXF editor allows the user to save any changes in either DXF or DWG formats which are AutoCAD 13/14/2000 compliant.

4.2 Open an Existing DXF file

By default, after the user creates a DXF file in RASPLOT, when the DXF editor is opened it will automatically open that DXF file. However, you do not have to have RASPLOT create a DXF file in order to use the DXF editor. To use the DXF editor, open RASPLOT, click "File" and "DXF Editor."

Click either "File" and "Open" or the "Open Button" to open the "Open" dialog box. Under "Files of type:", select either "AutoCAD files (*.DWG)" or "DXF files (*.DXF)". Browse the computer to locate the file of the selected file type. Click the "Open button" to open the selected file.
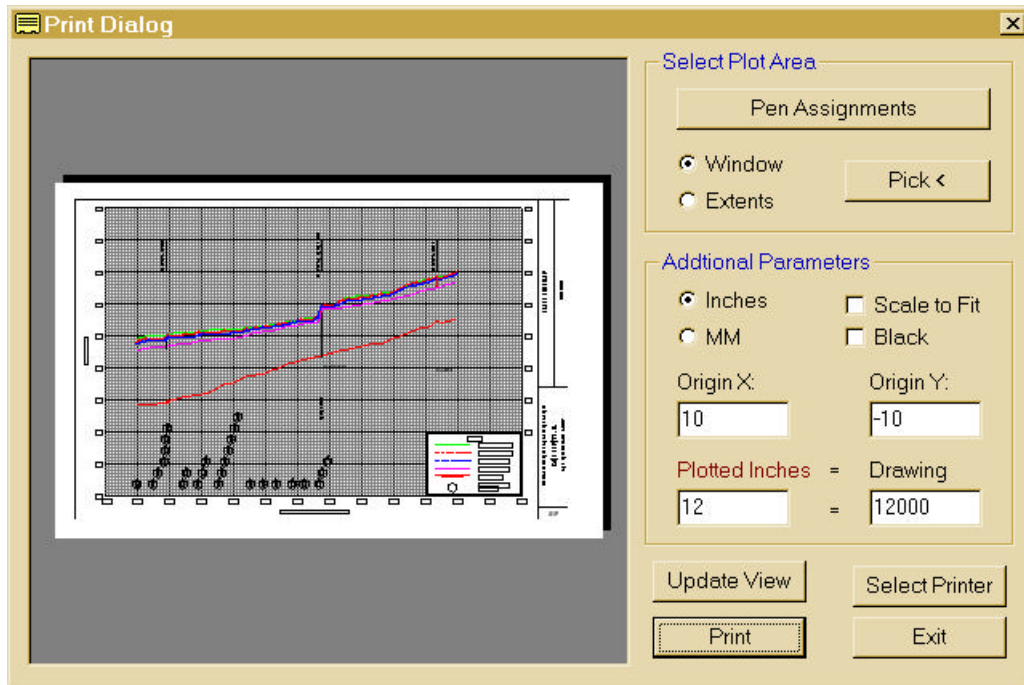
4.3 Save changes in DXF format

If the drawing is named, RASPLOT saves the drawing under the specified name.
If the drawing is unnamed, RASPLOT displays the "Save Drawing As" dialog box. Enter a file name and save the drawing.

By default, RASPLOT will save the drawing as a DXF file.

4.4 Print the DXF file

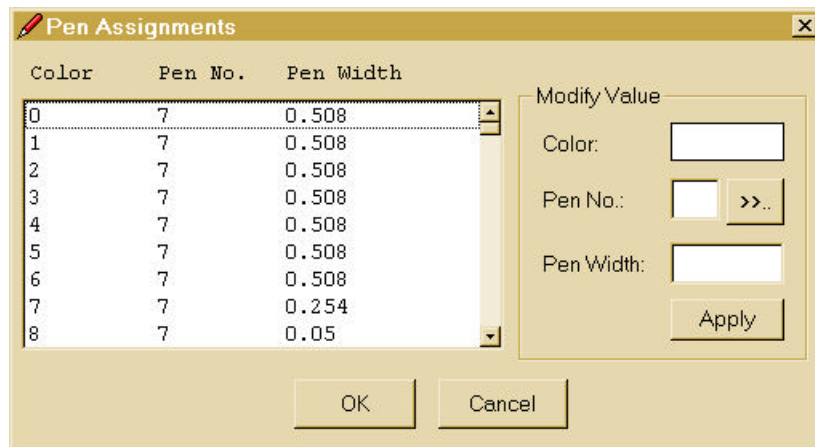From the "File" menu, click "Print". From the tool bar, click the "Print" button.

Figure 4.1 Print Dialog

Select Plot Area

Pen Assignments
This button Displays the Pen Assignments dialog box. It sets the pen number and pen width associated with each color.

Pen Assignments dialog box
Select the entry or entries to modify from the list.

Figure 4.2 Pen Assignments Dialog Box

Modify a Value
Modifies parameters for pen and width.

- Color
- Pen
- Width

Use the >> button to determine which pen is assigned to a specific color.

Pen Width

Enter the line width to instruct the printer how many lines are required to fill a solid area. Some devices that do not have physical pens rely on the pen width to fill solid areas with lines. Pen width is not available for some plot devices.

Window

Plots any portion of the drawing. Chose the Pick < button to specify two corners of the area to be plotted by using the mouse to designate the window if the whole area you want to specify is visible on the screen.

Extents

Plots the portion of the current space of the drawing that contains objects. This option is similar to ZOOM Extents.

Additional Parameters

Scaled to Fit

Scales the plot so that the view chosen and the portion of the drawing to be plotted, is made as large as possible for the specified paper size. When Scaled to Fit is selected, the text boxes display the actual scale used. RASPLOT will update this scale whenever you make any entry that affects the scale. When Scaled to Fit is turned off, the text boxes default to 12 =12 except when the scale has been previously set to other values. In that case, DXF Editor will display that scale in the text boxes.

When millimeters are chosen, the label reads Plotted MM. = Drawing Units.
When Inches are chosen, the label reads Plotted Inches = Drawing Units.

Origin X: / Origin Y:

The plot normally begins in the lower-left corner of the paper (the home position). Enter the plot origin in the X Origin and Y Origin boxes to place the plot origin at another location on the paper. On some plotters you can use negative coordinates.